COGNIZANT

Cognizant

Putting the *Experience* in Digital Customer Experience



KEEP CHALLENGING™

Produced in conjunction with

OXFORD ECONOMICS



Executive Summary

As the digital revolution has gathered momentum, it has become widely understood that the "digital customer experience" is the *key* to engage with, delight and monetize customers in the modern world. However, a miniscule number of U.S. and European companies believe their customers' current digital experience could be qualified as "excellent," our primary research reveals.

In an era when the majority of organizations believe *their brand is software and software is their brand*,[1] companies are making a shocking admission that requires urgent attention: The digital experience that they offer to customers isn't so great.

It is alarming that so few enterprises believe — in late 2014, as the Internet celebrates its 20th birthday as a commercial highway — that they are mastering this key lever of business success. This finding should serve as a wakeup call for those in charge of their organization's digital future or, let's face it, their future.

In this major report, Cognizant's Center for the Future of Work partnered with leading market research firm Oxford Economics to conduct extensive interviews with senior executives in charge of digital transformation initiatives within their organizations. We examined how organizations in both the U.S. and Europe are re-thinking the way they market, sell and provide value-added services to take advantage of the incredible new possibilities that next-generation technologies are creating. (See Appendix, page 26, for more details on the survey methodology.)

Key Findings

Our research reveals that while a significant majority of organizations conceptually understand the scale of the opportunity and threat presented by the digitization of the customer interface, few are taking the bold steps necessary to unlock these opportunities, nor are they moving at a pace that will keep them competitive in rapidly changing markets. Among the key findings:

- Almost 60% of respondents say that analysis of digitally-derived customer data is key to their company's innovation efforts.
- Within three years, collecting and analyzing customer metadata will become more important than collecting and analyzing customer transaction data.
- Fewer than 30% of respondents believe their customers' digitally-mediated experience and engagement with their companies could qualify as "high quality"; a quarter believes it is no better than "fair."
- Only 16% of respondents claim to be effective at collecting and leveraging customer data from digital interactions.
- Approximately 42% of respondents said that customer and data analysis is not a key element of their innovation efforts, and 47% don't seem to be focused on creating personalized services.
- Fewer than 20% of respondents use analytics generated by application programming interface (API) traffic to understand their customers' online and offline purchase journeys.
- Just 41% of respondents in the retail industry say they will be effective at analyzing customer metadata by 2017.
- A mere 42% of respondents say they have adequate tools and skills to analyze digitally generated data.
- Only one-third of respondents have made adjustments to their business model to pursue strategies driven by digital information about their customers.

At this time of incredible business dislocation, when the rise of the digitally empowered millennial and Gen Z consumer is upending business-as-usual, enterprises face a series of stark strategic decisions necessary to survive and thrive in digital *terra incognita*.



Decisions Ahead to Steer the Digital Journey

Our findings clearly show that business leaders recognize the immediacy and importance of the decisions ahead, primarily the decision to re-tool their digital customer interface. But we can now clearly see just how far many have to go on their digital journeys, especially when it comes to job one: collecting, analyzing and distilling meaning from the data that swirls around every digital interaction that every consumer now has, what we call a Code Halo.™ [2]

It is up to today's business and technology leaders to seize the once-in-a-generation opportunities that are being created by the new wave of social, mobile, analytics and

cloud technologies (the SMAC Stack™), in combination with the emergence of the Internet of Things (IoT). We found clear but troubling evidence that many leaders are far from cracking the code at the heart of these opportunities.

While there is general recognition that something big is happening, few companies are putting enough action into achieving the "art of the possible" and what can be attained with the tools and skills now available.

While there is general recognition that something big is happening, few companies are putting enough action into achieving the "art of the possible" and what can be attained with the tools and skills now available. The baby steps being taken by many of our survey respondents to re-imagine their critical customer interfaces should be re-examined — urgently — in an era when Starwood Hotels allows you to check in *and* open the door to your room with your smartphone (or, soon, with your Apple Watch); when the CityRock Climbing Center in Colorado Springs lets you sign in and manage your fitness program though an app; and when UK-based taxi app Hailo eradicates the need to hail a London taxi or pay with a credit card or cash (it's all done through your phone). Without making sound decisions over the coming months, many may be left struggling to catch up to digital winners.

Read on for more insights from our study, to learn from the steps and missteps of your peer organizations, and to gain guidance and recommendations on how to upgrade your digital customer experience — and turn it into something your customers can't live without. (See Appendix 2, page 26, for our definition of "digital customer experience.")

Key to Creating Experiences: Code Halos

By completely re-imagining how they interact with customers, using the possibilities spawned by next-generation digital technologies and associated business practices, companies such as Apple, Google and Netflix have ignited a revolution in serving and monetizing their customers.

These companies, along with the other three members of what we call "The Trillion Dollar Club"[3] (Amazon, Facebook and Pandora), have leveraged the information that individuals generate through online buying, browsing, "liking," swiping, commenting, etc. to understand and even anticipate their customers' wants and needs with greater accuracy than has ever been possible before. Using this information — the Code Halo — they have been able to seemingly read the minds of their customers — "if you enjoyed product X, you'll probably love product Z" — and make their customers' purchasing process easy, enjoyable, fun and seductive.

Now, inspired by these pioneers, companies like Burberry, mBank, Royal Caribbean and Disney are re-thinking the way they market, sell and offer products and services, too. Among other things, Burberry embeds chips into its clothing that activate short films on smartphones and tablets; mBank delivers digital services to customers based on real-time banking activity; Royal Caribbean has partnered with FourSquare to enable guests to keep up with events on the ship; and Disney has developed Magic Bands that function as room keys, admission tickets and more. Using SMAC Stack technologies and by harvesting data from "smart" objects, aka "the Internet of Things," these and a growing number of enterprises are developing new models of how to build demand-side customer value and generate supply-side financial return.

You Had Me at '0100100001000101010011000100110001001111'[4]

Although the opportunities created by Code Halo thinking are extremely diverse[5] and range across business process areas as varied as supply chain management and new product development, the best place to see their transformational impact today is in the area of sales, marketing and service. The digital customer interface is the white-hot furnace in which many new ideas and innovations will be forged and eventually find their way into various business functions.

For that reason, Cognizant's Center for the Future of Work partnered with Oxford Economics to survey executives charged with leading their organizations' initiatives to digitally engage with their customers. Through a computer-assisted telephone interview (CATI) process, Oxford Economics gathered and analyzed views and opinions from 300 senior leaders with responsibility for consumer data and analytics. To add color and nuance to this data, we also conducted 10 in-depth, one-to-one interviews with executives on the front lines of this new competitive battleground.

The results of our quantitative and qualitative research reveal that enterprises know something huge — powered by technology, but not simply a technology issue — is now happening in every market in every corner of the world. These three quotes from the survey accurately reflect the widely held views among all respondents:

- "Making use of data is the 'golden nugget' of contemporary business."
- "Our desire is to build a seamless (cross-channel) interaction model."
- "We don't want to find ourselves in a situation where our customers leave us behind."

Even the most cursory glance at the headlines of business and technology news articles in recent years reveals example after example of companies either reaching new commercial heights through their use of innovative technology or being sunk by the very same technologies. More and more executives are only too well aware that a technology-driven revolution is gathering momentum that is set to change not simply the technology, systems and business processes in their organizations but also the very nature of what their organizations do and how they do it.

For many of us, the notion of an "experience" can seem completely nonsensical; we're simply trying to pay our bill or change our flight or schedule an engineer as quickly and painlessly as possible. Our customer "experience" — most of the time — is hardly *an experience* at all.

From the research conducted for this report, it appears that survey respondents understand the importance of getting the digital customer interface right, and they comprehend the role that data plays within this effort in terms of leveraging Code Halo-style approaches and thriving in the new digital tempest.

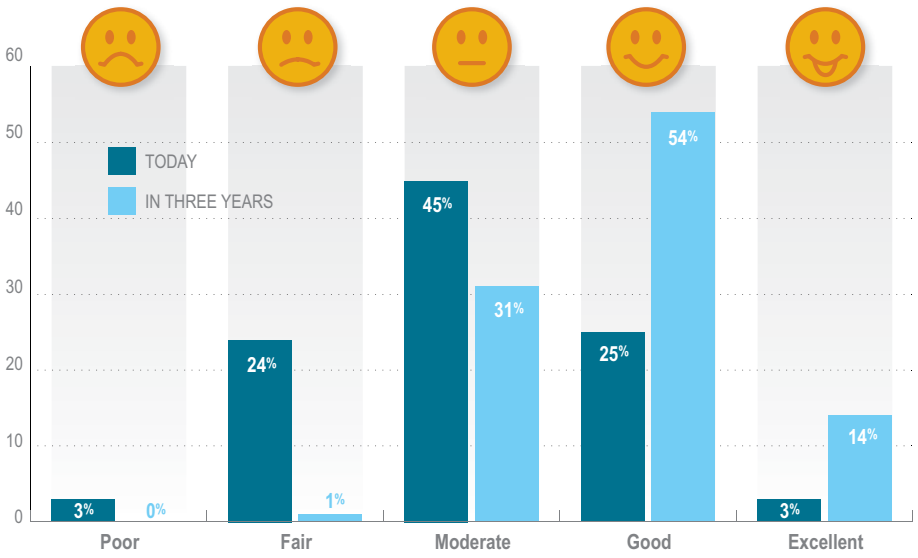
Part of this understanding stems from our experiences, not as business leaders but as individual consumers in our own daily lives. While we love the "Apple experience" or the "Netflix experience," we know how few and far between these types of interactions are; the vast majority of interactions we have — with banks, airlines, government institutions, insurance providers, employers, retailers, restaurants, the phone company (the list could go on) — are irritating or exasperating at their worst or, at best, completely forgettable. Few of them truly engage or delight us. For many of us, the notion of an "experience" can seem completely nonsensical; we're simply trying to pay our bill or change our flight or schedule an engineer as quickly and painlessly as possible. Our customer "experience" — most of the time — is hardly an *experience* at all.

Business leaders clearly recognize they are not delivering *experiences* to their customers. Figure 1 reflects this perspective; only 3% of the respondents believe their customers' current experience is "excellent." It appears that the executives in this survey – who work for banks, insurance providers, retailers, etc. – know their customer interactions are far from what they should be.

But Figure 1 also suggests that smart business and technology leaders realize this must change; that the "Apple experience," the "Burberry experience," the "Disney experience" has to become the norm, not the exception. If their organizations are to become members of the "Second Trillion Dollar Club," these executives seem to understand, they have to focus on improving their customer experience significantly. Over the course of the next three years, respondents expect to be highly focused on improving this state of affairs; by 2017, 54% believe their customers' digital experience will be at least "good," and roughly 14% believe they will be able to justify its being regarded as "excellent."

Huge Focus on Upgrading the Customer Digital Experience through 2017

How would you rate the overall quality of your customers' experience and engagement with your company today and in three years?



Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives

Figure 1

Respondents realize they need to make major strides in the quality of the consumer experience over the next three years. They "get" that improvements in their customers' experience will, in turn, create new opportunities for them to learn about their customers, anticipate their needs and profit from customer interactions at increasingly higher levels. As Jørgen Klüwer, Head of E-Commerce at the Danish supermarket group Dansk, puts it: "To make a sale [of a TV], we need not just a good price and a good promotion at the point of purchase, we also need to be there a month before the customer goes out to buy it."

Mike Kozub, Vice President of Customer Insights and Analytics at Nationwide Insurance, suggests that smart companies are building customer engagement efforts into their big-picture goals. "We really care about being outstanding at delivering personal and personalized experiences. The essence of that is in building that personal relationship with our customer in a digital environment." The explosion of machine- and human-generated data is allowing companies to more effectively interact with customers and understand what is important to them. For Dansk, says Klüwer, the result is a full picture of "who the customer is, what her preferences are and what her shopping behavior is," which in turn helps the company improve her experience in the future.

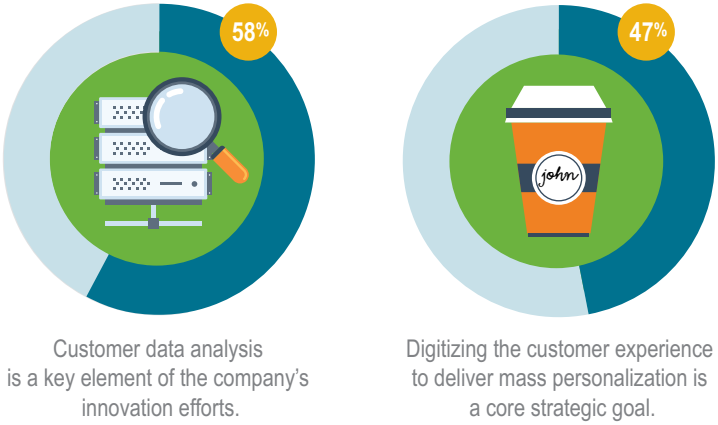
The New Frontier – "Mass Personalization" – Is Thinly Settled

More than half of respondents say analyzing digitally-generated customer data is a key element of their company's innovation efforts; nearly half say digitizing the customer experience to deliver "mass personalization"[6] is a core strategic goal, as shown in Figure 2. In fact, survey respondents say they place higher value on customer-centric growth initiatives, such as increasing customer retention and engagement and creating new customer experiences, than on traditional goals, such as geographic expansion, M&A and even recruiting high-quality employees.

A major element of that improvement is offering products and services that matter most to customers. As depicted in Figure 3, next page, respondents are clearly focusing on product and service innovation, enabled by digital interactions and Code Halo-style approaches; over half (54%) of respondents say they are co-creating with customers, and another 53% say they are focused on creating personalized products, services and experiences. Improving communication with customers (51%) and building customer loyalty are also major areas of focus for companies looking to improve the consumer experience.

Strategic Focus on Creating 'Markets of One'

To what extent do you agree with the following statements about your company's approach to attracting and retaining customers and personalizing their experiences?



Note: "Agree" and "Strongly agree" responses shown.
Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 2

Many companies are at risk of completely missing the opportunities that Code Halos, SMAC and IoT technologies are generating.

"There is a clear understanding that the strategy needs to be about the customer, not about products," says Thierry Campet, Global Head of Governance and Customer Insight at Zurich Santander, a joint venture between Zurich Financial Services Group and Banco Santander.

The hard truth is that many companies are at risk of completely missing the opportunities that Code Halos, SMAC and IoT technologies are generating. Many business leaders do not see the critical significance of the digital customer interface, the role of data, the need to innovate in the area of mass personalization or the opportunity to co-create with customers. Approximately 42% of respondents said that customer and data analysis is not a key element of their innovation efforts, and 47% don't seem to be focused on creating personalized services. While this may not be totally surprising – to paraphrase William Gibson, the future is here but just unevenly distributed[7] – executives who find their own situations reflected in these findings should be extremely concerned about falling behind. In this race, leaders are stretching their advantage, and laggards will, in all likelihood, never catch up.

Quick Take

Insurer Carefully Curates its Digital Experience

In an industry that is aggressively minimizing human interaction, Nationwide is prioritizing the customer experience. Mike Kozub, the company's Senior Vice President of Customer Insight and Analytics, says the key is maintaining personal relationships. "Our desire is to build a seamless interaction model that allows consumers to interact with us and accomplish what they need and want in a digital environment, but then be able to transition and speak to a person if they so desire," says Kozub.

Nationwide sees its biggest challenge as meeting customers' rapidly changing wants and needs, especially as people grow increasingly empowered by the wealth of information at their fingertips, which makes switching carriers less of an inconvenience than it was in the traditional face-to-face selling model. To understand current – and potential – customers, Nationwide is using social media analytics in a test-and-learn environment to collect valuable information. Though concerned about data privacy, the insurer forgoes many collection methods because they are not secure enough.

The protection of customer data is part of the company's strategic move to prioritize its customers' concerns. Nationwide also tailors offerings to the individual without being invasive. "There is a significant vetting of approaches and the way we interact with consumers that takes place with our business partners, IT partners, and then with marketing itself," says Kozub. Ultimately, the company's use of analytics is helping it retain pure digital customers. "Our ability to improve that relationship and understand how to make them stay our customers has improved dramatically."



Decoding Customers Puts Money on the Table, but Short-Term Thinking Prevails

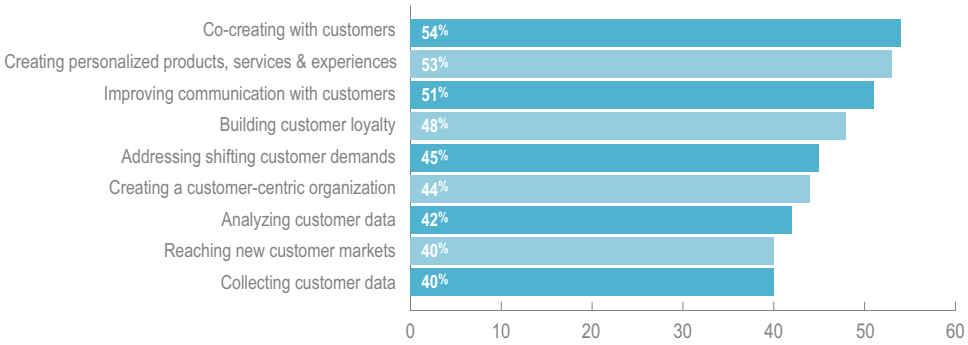
The clear understanding and broad-based consensus around the push for better digital engagement is further reinforced by the fact that enterprises are already seeing quantifiable ROI from their efforts.

Enterprises that understand the need to re-tool their interactions with customers and prospects report that these efforts are paying off; as shown in Figure 4, next page, fully three-quarters of respondents report good or significant return from their data-mining efforts, while only 12% say they have seen little quantifiable return.

These findings are in line with those published in our 2013 study, *The Value of Signal (and the Cost of Noise): The New Economics of Meaning Making.*[8] In that study, in which we examined the return on investment of analytics, we found organizations had generated $766 billion in total economic benefit

Mass Personalization Puts Customers in the Driver's Seat

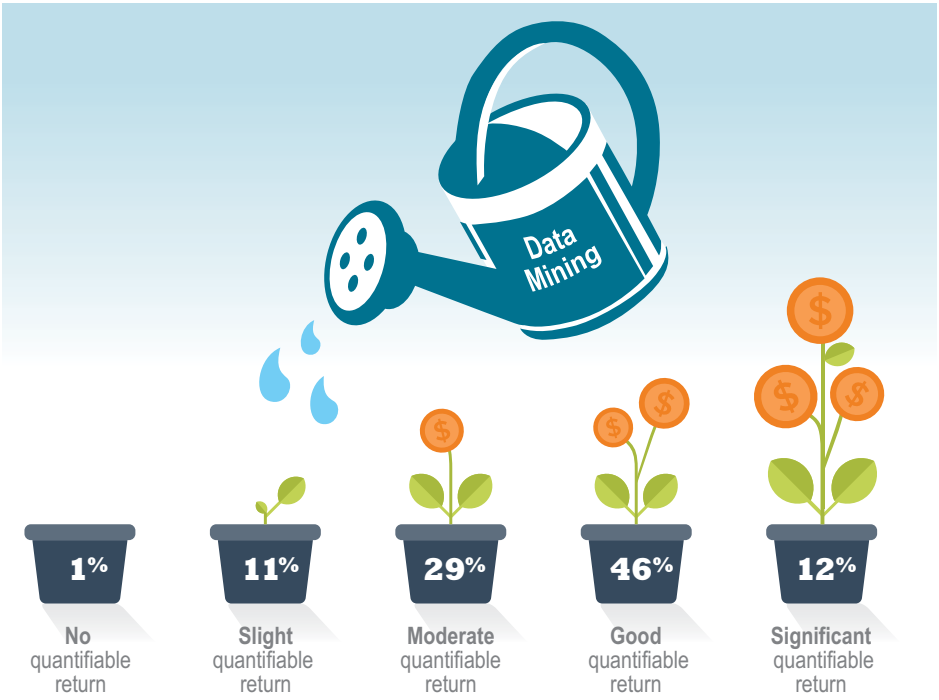
To what extent does your company focus on the following customer experience issues today?



Note: "Relatively high focus" and "key focus" responses shown.
Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 3

Better Customer Understanding Has a Clear ROI

Please rate the level of measurable ROI your company has seen from its data-mining efforts.



Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 4

from their business analytics initiatives over the course of the previous fiscal year. Much of that activity was oriented toward understanding the code being generated by digital customer engagement in the early stages of Code Halo explorations.

As Code Halo thinking has spread, it is safe to assume that the scale of these economic benefits has correspondingly grown.

As Code Halo thinking has spread – at both the customer interface and a broader range of business areas – it is safe to assume that the scale of these economic benefits has correspondingly grown. This is reflected in the fact that, looking ahead, companies expect additional improvements to customer experience and engagement; nearly half (45%) of respondents say they expect digital profiles to spark gains in profitability, and many expect improved customer retention (38%) and market share (37%), as shown in Figure 5, next page.

As Figure 5 reveals, fewer companies are using digital profiles to improve the development of products and services, expand into new lines of business and attract the next generation of customers. But at the same time, nearly 60% of respondents said that customer data and analysis is part of their company's innovation efforts; it could be that these follow-on developments may be on the way. Respondents from various industries see these issues differently; retail sector executives expect to boost customer retention (49%), while insurance respondents are more likely to expect an improved ability to develop new products and services (39%).

Quick Take

Digital Bank Bets Heavily on Design, Analytics Infrastructure

As a pure digital offshoot of its parent bank (BRE, a commercial bank), Poland's mBank has always focused on delivering products and services outside the traditional branch relationship, and on upgrading the customer experience. By design, the company is ahead in digitizing its processes in an industry that consistently lags behind many others.

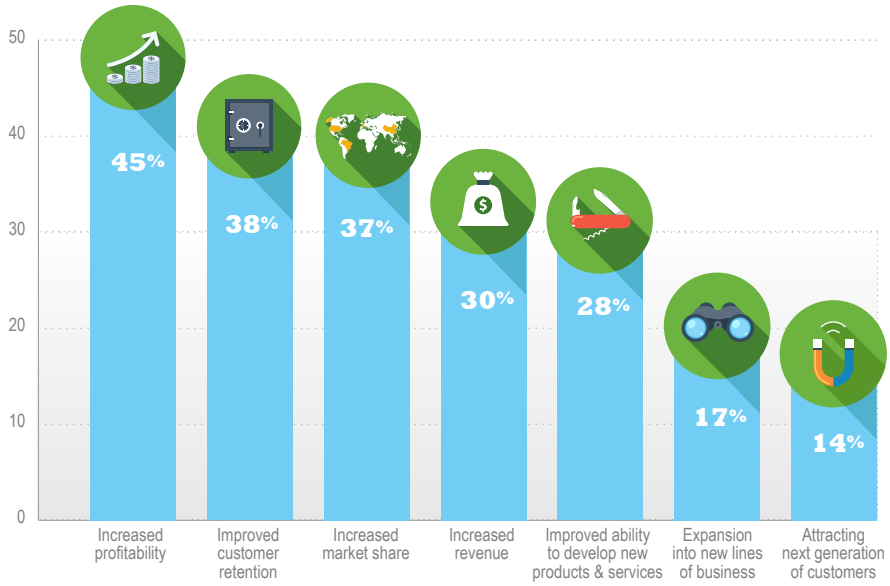
Michal Panowicz, mBank's Managing Director for Products, Digital and Marketing, is acutely aware of the banking industry's tendency to fall behind. "We as an industry still give customers a digital engagement model almost straight from the 1990s – online banking consists mainly of noninteractive tables with data. Progress has been awfully slow," he says. The industry, he adds, is held back in terms of technology. Complex banking and transaction systems, slowed by risk assessment on the back-end and, in many cases, inconsistencies among the systems of merged banks, have held the industry back from making meaning out of customer data.

But mBank is ahead in these areas, and it has developed the technology required to act intelligently on customer data. The company built a logarithmic engine that uses 2,000 variables when making offers to customers, mostly targeted to coincide with events that occur in real time. For example, when a customer account is credited, the customer is offered suggestions on how to best use cash based on their particular needs. And because customers opt in for these pitches, they are more about quality – that is, tailored advice – than quantity.



Leaders Expect Bottom-Line Impact from Digital Engagement

What value do you expect to gain from improved customer experience and engagement based on your use of digital profiles?



Note: "Good benefit" and "substantial benefit" responses shown.
Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 5

A cautionary note: While the focus on improving profitability by injecting Code Halo thinking into the digital customer interface is entirely understandable, logical and right, surprisingly few decision-makers surveyed (only 14%) appear focused on the role that digital engagement will play in cultivating the next generation of customers.

This would be a troubling statement for long-term investors in one of these organizations. The incredible changes in consumer behavior being driven by millennials and Generation Z mean that the expectations of your customer in five or 10 years are going to be quite unlike those of today. Code Halo thinking provides a clear roadmap to make the decisions now that will ensure your organization is not accelerating toward an "extinction event."[9] Managing the "dual mandate" of balancing today's priorities against tomorrow's is not elective but mandatory.

Digital Customer Engagement: Further to Go; Later Than You Think

Based on the high expectations of companies for improving customer engagement and data collection over the next three years, it is clear that they recognize both the rationale and urgency to re-craft customer interactions in line with Code Halo thinking. However, the survey findings also clearly highlight how far they must go to capitalize on these opportunities.

The expectations of your customer in five or 10 years are going to be quite unlike those of today.

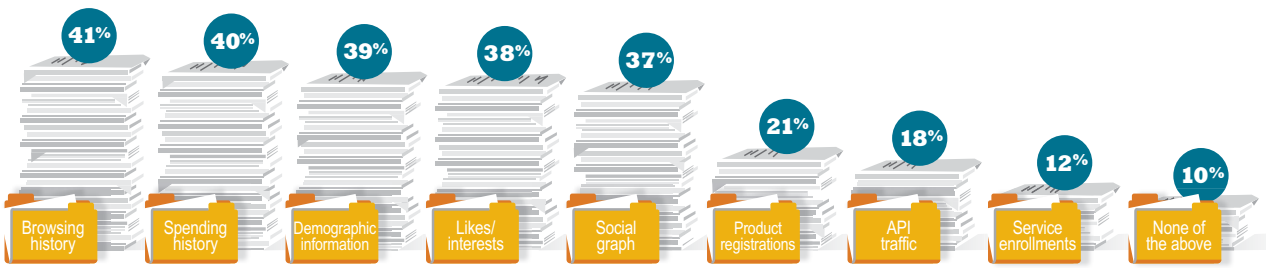
For many, data-driven investments are not yet seen as game-changers. Our research illustrates that for all the focus on using customer data to achieve superior outcomes, some basic foundational steps (such as data collection methodologies) are either missing in action or far from leading edge.

Seeing — *But Not Recognizing* — The Importance of Data

Despite identifying customer data collection as key to innovation, only 16% of respondents say they are effective at it today. As shown in Figure 6a, companies in our survey are not collecting data from a wide or up-to-date variety of sources. Companies still rely heavily on familiar tools to capture vital customer information, and a broad range of customer data remains uncollected, resulting in missed opportunities to develop and enhance digital profiles. In fact, fewer than half of respondents say they collect data such as browsing and spending history, demographics and Facebook "likes." Organizations with these views can — it appears — somewhat understand the role that data is going to play in their future but not with enough clarity to act judiciously to capture and leverage it.

Great Expectations, Tiny Steps

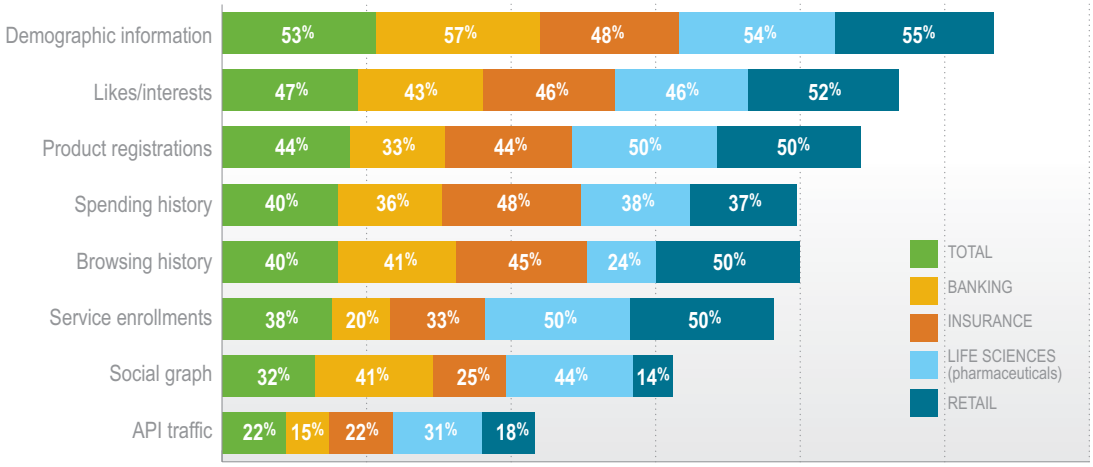
What types of customer information do you collect? Select all that apply.



Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 6a

Vertical Market Views of Customer Data Capture

Please rate on a scale of 1-5 the value to your business of each type of customer data selected.



Note: "Valuable" and "highly valuable" responses shown.
Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 6b

Online comments (47%), third-party providers (36%) and log-in data (35%) are still the wellsprings of customer info, while only 19% say they are collecting data from the IoT. Well under half of respondents (41%) collect data on browsing history, one of the most bountiful sources of customer information, and even fewer are capturing demographic details (39%), likes and interests (38%) and social graphs (37%). Meanwhile, product registrations (21%) and service enrollments (12%) are even lower on the list; fully 10% say they do not collect information from any of these sources. Fewer than one-fifth of companies use API traffic analysis to understand their customers' online and offline purchase journeys, an essential part of understanding digital profiles and a core element of the personalization algorithms that drive leaders of the digital economy. Legacy methods such as direct marketing (57%) and events (46%) are still rated as more valuable sources of customer information than social media interaction (36%) and the Internet of Things (33%).

To anyone tuned into the current *zeitgeist*, these responses are — depending on your mood — laughable or horrifying. The types of technologies and techniques that significant majorities of respondents say they don't use are exactly the ones fueling the out-sized success of The Trillion Dollar Club and a broader swath of organizations that understand which way the digital winds are blowing. Of course, direct marketing and events still have their place in an organization's marketing and outreach efforts and will remain in place for the foreseeable future; but to imagine that these approaches will retain their potency in the face of greater digital engagement is akin to sustained belief in the power of the arrow over the Winchester rifle.

Figure 6b provides a vertical-market breakdown of these dynamics in the four areas surveyed: banking, insurance, pharma and retail. Retailers are more focused on API traffic than bankers, but bankers see "social graph" analysis as more valuable than retailers. While this finding appears somewhat counter-intuitive, in reality, these deltas are not that significant. As Figure 6b makes plain, organizations in each of these vertical markets have a huge market opportunity literally sitting in their databases today.

That over 40% of banks do not collect demographic information about their customers and that 80% don't capture data from service enrollments – *in 2014* – is extraordinary. A modern bank is the epitome of a traditional organization in which software is the brand; when was the last time you met your bank manager? But as this data illustrates, banks are far from maximizing the potential of seeing their customers' Code Halos. In theory, a bank knows individual account-holders about as well as any supplier of products or services knows any of its customers: how much you earn, what you spend your money on, where you go and when, how much your house is worth, where you live, whether you're cautious (a saver) or extravagant (a second Caribbean holiday in a year?!). Yet with all of this information – and the potential for much more to come – at the end of their digits, banks are clearly still a long way from creating the type of interaction – the *experience* – that is becoming the differentiator between pre- and post-Code Halo success.

That over 40% of banks do not collect demographic information about their customers and that 80% don't capture data from service enrollments – *in 2014* – is extraordinary.

Banks may be particularly errant, but they are clearly not alone in their failure to take advantage of the data their customers generate; many retailers also seem to be moving sluggishly – if at all – to extract the full meaning of the data that swirls around their customers, online or in the physical world. Over 60% of the retailers represented in this survey do not see their customers' spending data as a valuable source of information. Given Amazon's and Netflix's success in turning information on what someone *has bought* into a key indicator of what they potentially *may buy*, this finding falls into the alarming camp. The foundation of the sales process rests on understanding the unique wants and needs of an individual; their buying history provides this insight. Retailers that do not leverage this type of data through institutionalizing its collection and the extraction of meaning from it face a very uncertain future amid the crumbling malls of mid-America and beyond.

Leveraging the Clues in Metadata

Core to the notion of upgrading the digital customer experience is the "metadata" that surrounds what has historically been considered primary transactional information. Banks have traditionally regarded the information within a transaction (e.g., $100 was credited to an account on Sept. 26, 2014, at 10:50 AM) as the primary insight to focus on. In a Code Halo environment, where the totality of the customer's digital experience has the potential to be as important as the actual transaction itself, the knowledge that $100 was transferred by a parent to their son's account a day before the son's birthday and after the parent booked an Acela train ticket to New York to visit their son, could introduce a raft of possible ways to enhance the transaction with added-value suggestions for a perfect father and son bonding weekend together: "Hey, last time you were in New York you went to see the Yankees – want to take your son this time?"

The metadata generated by "likes," browsing, comments, scrolling and searches is hardly secondary data at all; in fact, it is fast becoming the most valuable data there is.

Few companies are effectively collecting and analyzing this type of data. However, metadata collection and analysis activities are expected to double over the next three years, as revealed in Figure 7 (next page). While some industries are ahead of others – just 41% of respondents in retail say they will be effective at analyzing

Over 60% of the retailers represented in this survey do not see their customers' spending data as a valuable source of information.

customer metadata in three years vs. 52% overall – expectations of necessary improvements point to significant planned investment in the SMAC technologies that enable Code Halos.

Figure 7 illustrates that while efforts to collect primary customer data and make meaning from it – *filter signal from noise* – will continue unabated over the next three years, efforts to collect and analyze metadata will assume an even greater importance during this period.

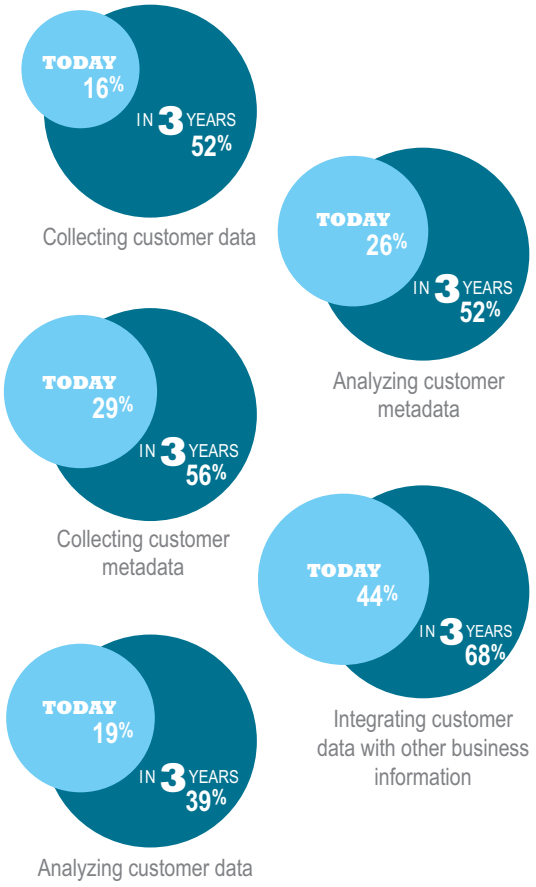
Plans to aggressively increase data collection efforts over the next three years clearly signal a strategic direction that many enterprises are already moving toward. Many more should follow them. As a caveat, it is worth pointing out that these expectations may be unrealistic; as will be shown momentarily, the skills and organizational structures needed to achieve these goals are still in very short supply.

Along with the leverage of metadata, there is a push to capture and analyze "social data" (information generated on social networks and search engines) in a more rigorous and structured way. Enterprises have an increasingly wide array of choices for collecting this type of data, but nearly one-third (30%) say that Google is still considered the most valuable source, as shown in Figure 8 (next page). Meanwhile, Facebook's perceived value is lower than its cultural clout might suggest, and while just 8% of respondents say Twitter is the most valuable source of data, about half (53%) say it is one of the top-three most valuable sources. Another 46% say LinkedIn is highly valuable. Pinterest and Tumblr are considered less valuable, and other social networks and search engines like Baidu, Qzone, Vkontakte and Quora are not highly ranked as valuable data sources by our North America- and Europe-based survey population.

Plans to aggressively increase data collection efforts over the next three years clearly signal a strategic direction that many enterprises are already moving toward. Many more should follow them.

The Metadata Wars Are Heating Up

How effective is your company at the following, today and in three years?



Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 7

Quick Take

Financial Services Joint Venture Excels with Digital at Cross-Continental Scale

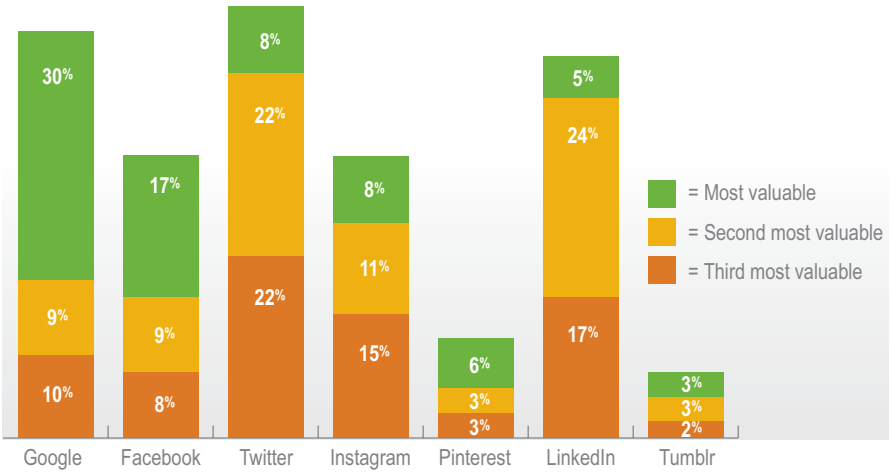
As a relatively new joint venture between a global bank with a footprint in Latin America and a Swiss-based insurer, Zurich Santander is in a good position to capitalize on customer data. Thierry Campet, Global Head of Governance and Customer Insight, says the company recognizes the increasing importance of digital and mobile distribution and is leveraging the insurer's experience in mature European markets to gain advantage over local competition in Latin America.

Acting intelligently on customer information enables the company to tailor products for the retail markets on which it is focused, in part by increasing the range of channels through which they are sold and serviced. "Because targeting and segmentation are areas which help us, we're focused on using information to create efficiencies," Campet says. "We're dealing in most countries with populations that have bypassed the Web and gone directly to digital. So if we can match needs with expectations by being a nimbler provider, it creates benefits for the customer – and for the bottom line."

Using digital technologies to drive satisfaction requires commitment, including a focus on upgrading legacy systems. Ultimately, Campet says, those investments will make data-driven operations more efficient, enabling Zurich Santander to service customers in smarter ways. The vision that underlies the outlay: "There is a clear understanding that our strategy needs to be about the customer, not about products. Not only is digital the way forward because it's a strategic tool for customer satisfaction; it also makes us a better provider."

In Leveraging Customer Code Halos, Google Rules

Which social networks and search engines are most valuable to your company as data sources? Please rank up to three.



Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 8

For many organizations, data mining within open, public social networks is still a difficult and challenging prospect. Concerns around privacy violations and security breaches are rife among businesses that are understandably concerned about operating in areas still limited by uncertain social norms and legislative boundaries. These concerns, however, should not serve as an excuse to not address and resolve them and plot a path forward that identifies how this type of data can be accessed and used. The data and metadata contained within these environments are too important to improving the customer experience to be left unaddressed.

No Silver Bullet: Organizations Need to Get the Skills *and* Tactics *and* Organization *and* Leadership Right to Create Awesome Digital Customer Experiences

It's one thing to understand the imperative to upgrade the customer experience, the role that data plays and the idea of Code Halos as a prism to pursue these initiatives. Being able to act on them — at a world-class level — is another issue entirely.

"Everyone you talk with about big data will say it's very easy to capture a lot of information. How you make sense out of it and how you use it — how you make money out of it — is the tough part," says Zurich Santander's Campet.

Nearly half the survey respondents feel this pain. Many report that their organizations lack adequate skills and tools for effective data analysis, which is creating a substantial drag on innovation potential. Collecting data is only part of the issue; once data is collected, turning it into meaningful business information remains a challenge, due to both human and technological factors. Many would no doubt concur with how famed technology writer Geoffrey Moore puts it, "Before data's an asset, it's a liability."[10]

Once data is collected, turning it into meaningful business information remains a challenge, due to both human and technological factors.

The truth of Campet's observation illustrates the scale of the challenge many enterprises face in realizing the full potential of the new digital technologies and commercial approaches central to the revitalization of customer interaction. In our recent travels discussing our book *Code Halos*, we have frequently met with clients who are energized by the opportunities that Code Halo approaches are generating but seem becalmed in their ability to act on them.

Moving Beyond the Doldrums

To execute on the vision of creating world-class, digitally-driven customer experiences, organizations need to align numerous tactical steps with strategic vision, ensure the right parts of the overall organization are involved, and establish clear lines of sight on the leaders with responsibility and accountability for bringing the vision to life. It also means having the right skills involved, both from a technical and business standpoint.

All of this may sound obvious or like simple common sense; but as Voltaire said, common sense is not so common. Our research surfaces consistent themes of frustration and angst as executives struggle to execute this so-called common sense. According to Michal Panowicz, Managing Director for Products, Digital and Marketing at Poland's mBank, the biggest barriers to upgrading customers' digital experiences include competing priorities, managing complexity and finding the right talent.

This is a widely shared view; as illustrated in Figure 9, 42% of surveyed executives say a lack of adequate tools and internal skillsets to analyze data poses a challenge to their data analysis efforts, ahead of persistent challenges such as data security and customer privacy (although 40% of respondents also say they are seeing increasing reluctance to share data as headlines about security breaches and government snooping persist).

The ability to collect, analyze and make meaning from the data that drives the personalization at the heart of Code Halo thinking is the "golden nugget" of contemporary business, says Dansk's Klüwer. "To be able to do so, you need very strong analytic capabilities in terms of human resources, but also the right technology." The demand is for workers with expanded skills, different experiences and new perspectives. Yet attracting the right talent won't be easy, especially for companies just starting out on their Code Halo journey.

Assembling the right combination of technology and talent is a fundamental necessity that cannot be ignored, dismissed or overlooked.

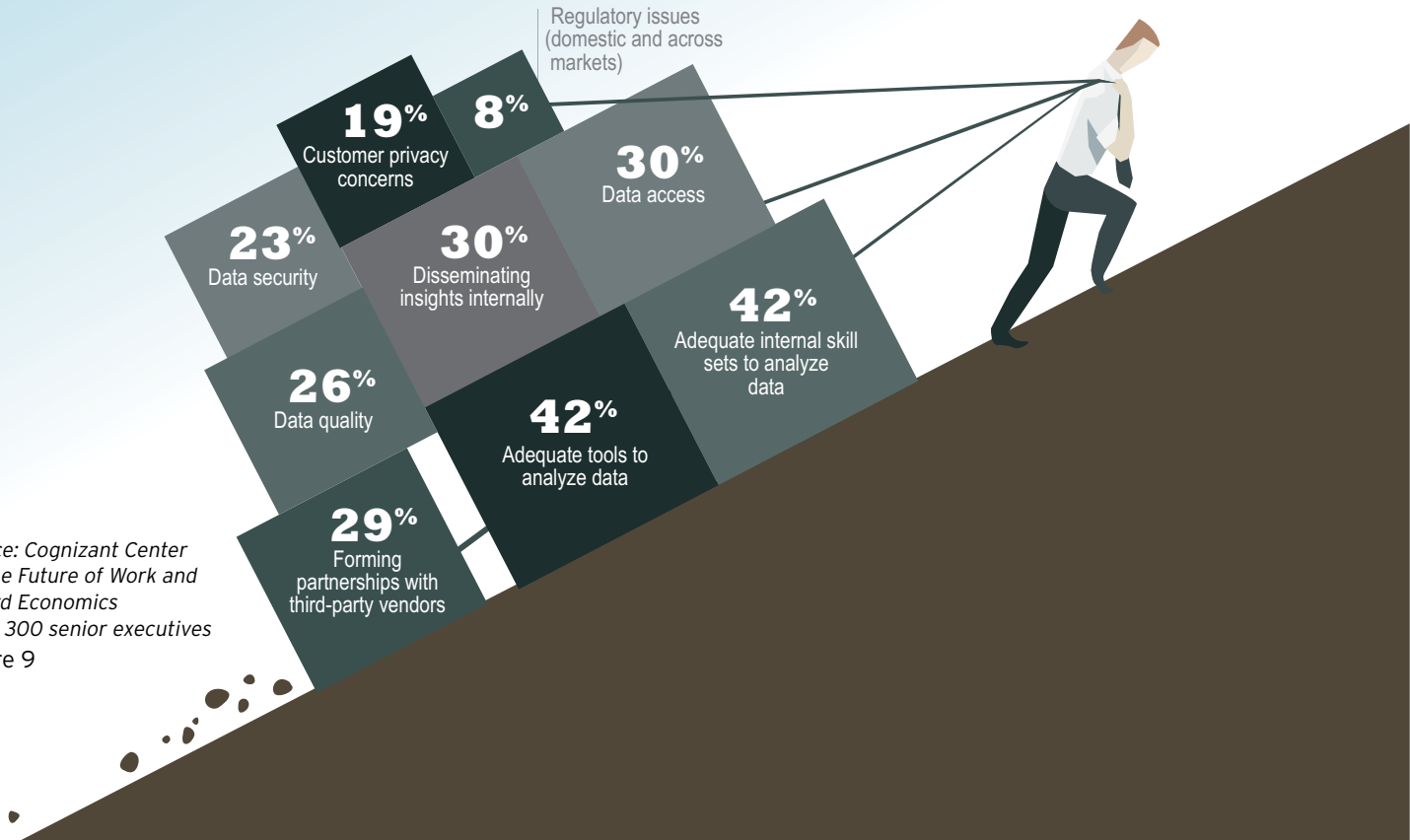
For Nationwide, hiring the right people is also one of the biggest challenges of keeping up with customer expectations and digital demands. "We need to make sure we can acquire the talent that we need to be able to execute these strategies," Kozub says. "We need to make sure that we bring in people and that we are constantly keeping up to speed with the changing and the new technologies."

Time and time again, we hear that enterprises lack the necessary skills to achieve the intended business results; many are still struggling to find the talent to make simple, early-stage initial investments in the SMAC technologies necessary for even the first steps on their transformational journey.

As shown in Figure 9, this struggle to on-board the right technologies for both the algorithms (the "smart robots") that drive Code Halo approaches and the talent (the "smart hands") to leverage these tools is very apparent. However, assembling the right combination of technology and talent is a fundamental necessity that cannot be ignored, dismissed or overlooked.

Wanted: Smart Hands, Smart Robots

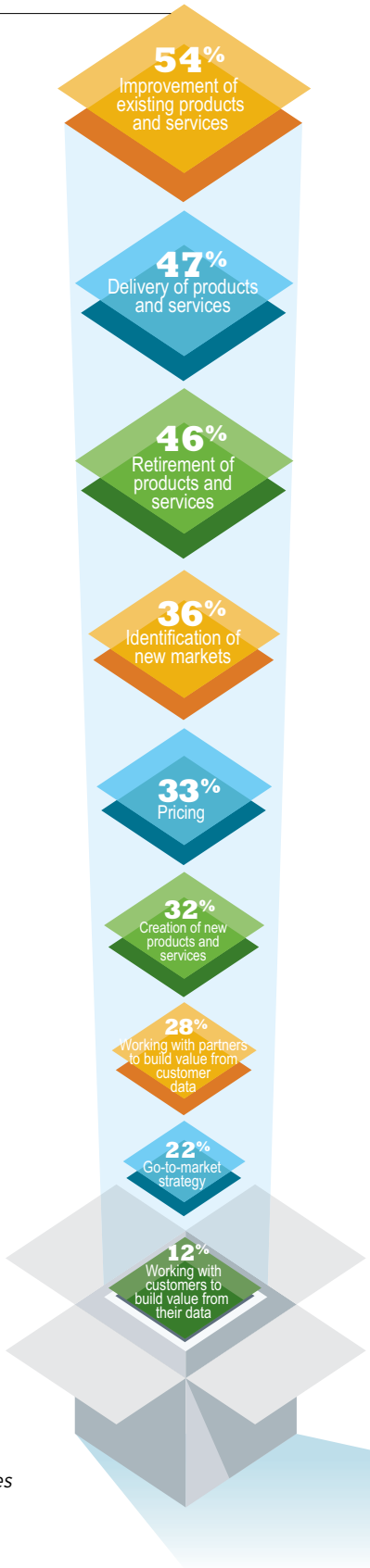
What are the biggest challenges associated with your data analysis efforts? Select up to three.



Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 9

Thinking Inside the Box

Over the past three years, which processes and approaches has your company changed as a result of your analysis of customer behavior and trends? Select all that apply.



Many enterprises clearly show signs of distress in building the right portfolios of skills and capabilities, but there is also evidence that they are additionally challenged by the need to make broader strategic adjustments. Capturing and analyzing customer data at enterprise scale requires significant upgrades to a wide range of business processes, and it can have significant commercial model implications. Figure 10 shows that few respondents have actually changed their business models (including go-to-market strategies or pricing) as a result of their analysis of customer behavior and trends.

Few enterprises, it appears, have put in place the bold, aspirational operational model changes, or the operating metric infrastructure necessary to pursue the potential of the new digital frontier. In *Code Halos*, we outline at length "the anatomy of a winning Code Halo solution" and stress the role that calibration of an appropriate business model plays in how a solution really takes off. As we put it, "the service or product can't just be 'cool'; it must deliver significant cost savings, revenue generation or even a new way to monetize a business process or customer interaction." Getting the technology right is not enough. Without re-thinking the commercial aspects of how data can and should be monetized, it is unlikely that material business returns will be generated.

Getting the technology right is not enough. Without re-thinking the commercial aspects of how data can and should be monetized, it is unlikely that material business returns will be generated.

Source: Cognizant Center for the Future of Work and Oxford Economics
Base: 300 senior executives
Figure 10

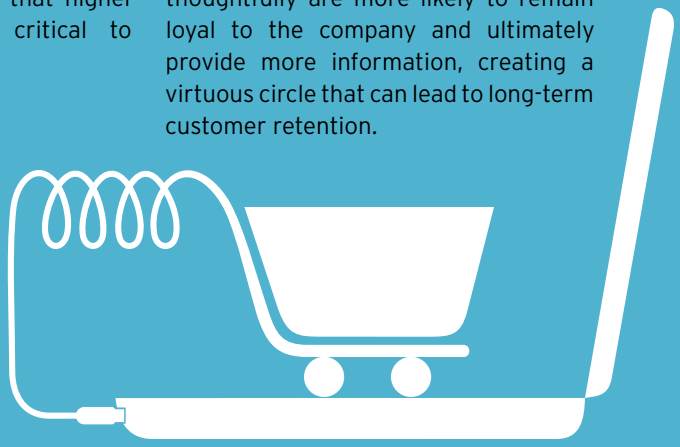
Quick Take

European Grocery Chain Delivers Consistent Omni-channel Digital Experiences

For Dansk Supermarked, Denmark's leading retailer, supporting the customer through each phase of the buying journey is critical to strategy. The company, which sells grocery and consumer goods through several branded outlets and over the Internet, must reach and accommodate customers through mobile and desktop devices and physical stores. This means integrating online channels and stores while competing with pure-play e-tailers. This increasing number of interaction and distribution channels will result in a "massive data pool" that requires the company to integrate information and act upon it intelligently, says Jørgen Klüwer, the company's head of e-commerce.

Doing so poses both technical and strategic challenges. Being able to act intelligently on data requires "very strong analytic capabilities — both in terms of human resources and technology," he says. But the company has the benefit of learning from companies that have been in the digital game longer, and it knows that higher customer satisfaction is critical to future results.

By providing more distribution channels, the grocer also opens new opportunities to advertise to customers — but Dansk Supermarked knows that customers resent being spammed with useless information. The company sets strategy with the idea that customers who see businesses using data intelligently and thoughtfully are more likely to remain loyal to the company and ultimately provide more information, creating a virtuous circle that can lead to long-term customer retention.



Where the Business is IT, IT Leadership Must Step Up to Lead

One of the key contributing factors hampering enterprises' ability to realize this potential is the issue of executive leadership; much of the commentary and debate swirling around the digital "phenomenon" over the last 18 months has pivoted on the tension between different business units regarding which is ultimately responsible for digital transformation. Gartner caused a firestorm when it suggested that by 2017, chief marketing officers would be in charge of more IT spending than chief information officers.[11]

> Although there is widespread agreement among business units about the need to upgrade the digital customer experience, investment decisions are usually not being made by business-unit heads.

In our work with clients, we have witnessed this tension first-hand. In some cases, we have observed business units taking digital initiatives entirely independently of "central" IT (even to the extent of hiring their own data scientists). In other cases, we have seen "central" IT stub its toe when trying to introduce digital possibilities that a business team was unwilling or unable to appreciate.

The findings of our study don't support the view that most business units are acting alone, without "central" IT involvement or leadership. In fact, although there is widespread agreement among business units about the need to upgrade the digital

customer experience, investment decisions are usually not being made by business-unit heads. Ultimate responsibility for customer data and analytics (the core of the digital experience) is concentrated in two key positions: the chief digital officer (45%) and the chief information officer (41%). Just 6% say the chief marketing officer has this power.

Until companies have the necessary resources – and support from strategists and "operators" at the head of the company – they will not be able to realize the full potential of the data available to them.

The job of the chief digital officer (CDO) – a relatively new position on the org chart – is to "provide oversight and strategy, and create a big-picture view of how social and digital technologies can make a difference to the entire organization," says Robert Berkman, contributing editor at the *MIT Sloan Management Review*.[12] According to a McKinsey Global Insights survey from August 2013,[13] 30% of respondents report having a CDO, and this group reports more progress toward their digital vision than others.

This role, it appears, is becoming more widely understood and instantiated. This is a positive development.

And where are CMOs during this marketing revolution? Some, no doubt, are morphing into the CDO role, but as Mark Twain might say, reports of the death of the CIO are greatly exaggerated. CIOs (some of whom may simply be changing their moniker to CDO) are clearly still a vital piece of the digital transformation jigsaw puzzle. But it is also true that cross-disciplinary teams are required to build out the full suite of capabilities required to make this transformation happen. CIOs need to re-assert their leadership at a time when next-generation digital fates are being decided. Again, as Nationwide's Kozub puts it: "We don't want to find ourselves in a situation where our customers leave us behind."

That's where harnessing the power of Code Halos comes into play. Competing on code will require significant upgrades to skills and technologies – combined in an integrated whole. Until companies have the necessary resources – and support from strategists and "operators" at the head of the company – they will not be able to realize the full potential of the data available to them.

Move-Forward Recommendations

In our book *Code Halos*, we argue that a profound change in business is currently underway as a result of the heightened expectations of how we want to interact with and through technology. Because consumer-grade technologies have made our lives easier, more fun, more enjoyable, more *beautiful*, we now expect that all of our digital interactions should be as pleasurable (or simply as efficient) as the ones we have with Apple, Square, Intuit and Salesforce.com (as just a few examples). When we interact with organizations whose digital interface is less than stellar, we have a sinking feeling that we are slipping back into some digital dark age; or perhaps simply 2007.

Quick Take

Pharma Leader Taps Digital to Boost Partner Conversations



Based in Switzerland, PregLem is a wholly-owned subsidiary of Hungarian pharmaceuticals maker Gedeon Richter, which specializes in generic drug provision. As the Global Head of Marketing, Haider Alleg oversees a team that is creating omni-channel and customer experience management strategies and tactics that the parent company plans to incorporate into its operations as part of a larger business transformation.

The stakes are high. New technologies are opening the boundaries of healthcare and pharmaceuticals, creating opportunities for disruption; if a technology giant creates a new patient support app, Alleg says, customers will expect the same benefits from their pharmaceuticals company. "It is up to the pharma industry today to anticipate who this new competition will be and what these new services will be," he notes. Mastering the Code Halo is a key part of the strategy.

Making use of the data the company gathers demands the breaking down of silos – both product- and market-based – and working in ways that enable it to partner with customers (mostly doctors, hospitals and national health organizations). The goal is to build on knowledge gleaned from these customers to create better products and services. To do this, the company is creating a central database of customer information and increasing its use of omni-channel marketing. "We will be the catalyst of conversation between [different customer categories]," he says. The payoff is capturing the value of those conversations and staying ahead of the competition.

Through the survey work and interviews undertaken for this report, we have seen ample proof that many, many enterprises share our sense that indeed something big is happening, and that there is a pressing need to reengineer their organizations to survive and thrive in this new digital era. And we have seen that creating a progressive digital customer experience is an area where many organizations are focused on first making "digital" really count.

> When we interact with organizations whose digital interface is less than stellar, we have a sinking feeling that we are slipping back into some digital dark age; or perhaps simply 2007.

But we have also seen that many enterprises are at an early stage of their digital transformation journeys and that many are struggling with strategic and tactical issues. It is still highly challenging to establish the tools, technologies and talent to create curated customer experiences and to make (and offer) meaning from digital interactions. Calibrating the right levels of risk and investment, and setting reasonable but motivating levels of commercial return, are, likewise, entirely non-trivial.

Stepping back, this is not unexpected. The digital transformation path that most enterprises are on is a long one. A C-level client said to us recently that "this is a 10-year journey." Genuinely "being digital" will take time and a lot of work. But recognizing the length of the road ahead is no excuse for not taking those first, and perhaps faltering, steps.

The following four key recommendations — generated from our analysis of these survey findings and from our ongoing consulting work with clients worldwide — are core foundational keystones to pursue in the creation of outstanding digital customer experiences.

- **"Action this day."** As we state in the introduction to *Code Halos*: "Think ahead a decade, when people are sure to ask two questions: *Did you see this technology-based sea change coming? Were you able to capture the commercial opportunity?*" It is up to today's enterprise leaders to seize the incredible opportunities enabled by SMAC and IoT technologies; opportunities that can potentially up-end business-as-usual assumptions. The first part of doing this is acting now. We are at a moment of great change, when new combinations of emerging technologies, new expectations and new possibilities — as well as new architectures of competition — are being created. A laggard can become a leader (think Apple), and leaders can fall by the wayside (think Nokia). The decisions that will determine your organization's prospects during the incredible revolution in expectations and possibilities that digital transformation approaches are creating — *in front of our very eyes* — are yours to make today. They won't wait until next year, next quarter, next month or next week. As Winston Churchill might have put it: Building Code Halos requires "action this day."[14] Our research clearly illustrates that many organizations recognize this need to act at SMAC speed, that traditional investment and deployment cycles are history and that markets are moving at unparalleled speeds. You must ensure that your organization recognizes this too, before it is too late.

We are at a moment of great change. A laggard can become a leader (think Apple), and leaders can fall by the wayside (think Nokia).

- **"Go big" or "go home."** The use of data to upgrade the customer experience represents a huge opportunity for businesses across diverse industries, and the race is on to harness the power of Code Halos. Action is taking place on multiple fronts. Companies are developing devices and applications to facilitate engagement, such as fitness trackers and other wearable devices, and co-creating offerings with customers. The goal is a virtuous circle of innovation: As satisfied customers engage more and generate more information, companies are able to further improve their customer experience, products and services. However, the research in this survey suggests that not everyone fully understands the scale of the bet that needs to be made to create the best-in-class digital experience that is central to leveraging the Code Halo opportunity.

  Many respondents, it appears, are making some moves, but these activities tend to be incremental and within the context of non-disruptively extending "business as usual." Some enterprises will, no doubt, derive some benefit from these steps, some of which are logical waypoints on the longer journey. But to really capture the Code Halo opportunity — to have a digital customer *experience* that could be genuinely called "excellent" — more aggressive steps need to be taken. Clearly, not every organization can spend $1 billion like Disney did on its Magic Band initiative.[15] Not every Code Halo or digital transformation move needs to be that

all-encompassing. But the actions your organization makes do need to be non-incremental and potentially disruptive. The ideas you try and bring to market should be significant enough that their success can propel your brand forward.

- **Let leaders lead.** Getting the right organizational resources aligned in the right way to address commercial opportunity is the fundamental work of business leadership. Our findings show that many companies are still in the process of putting together the pieces of their organizational puzzle. Given that upgrading your customers' digital experience is driven by digital technology but is really a business issue, multi-functional teams must, by definition, be involved in this transformational work. Achieving consensus on who leads, who follows, who analyzes, who advises, who consults, who authorizes, who manages, who maintains — across these multi-functional areas — is highly challenging to many organizations. But achieving this consensus and then allowing *leaders to lead* is priority one.

> Not everyone fully understands the scale of the bet that needs to be made to create a best-in-class digital experience.

  Organizations must break down the historical wall between IT and "the business" and ensure that product managers, financial controllers, designers, salespeople and engineers all sit as peers at the same table with IT staff, all recognizing that "we are in this together." In enterprises where "software is the brand" — where "the business is IT, and IT is the business" — creating these organizational structures (with leaders aligned to lead) is crucial work that cannot be botched or fudged or undermined by office politics and turf wars. Leaders must be given the mandate and resources to lead the digital transformation, lauded when they succeed and held accountable when they don't. IT executives must take a crucial step forward and lead these multi-disciplinary teams in a period when the role of IT staff as "order takers" is over.

- **"It's the talent, stupid."** The three previous recommendations are subservient to this final one; ultimately, an enterprise is nothing more than a collection of people, people whose talents shape what the business is capable of doing and succeeding at. The respondents in this survey and in the interviews clearly recognize that without the right talent, few of their plans and ambitions stand much chance of taking flight. This is a view we hear repeatedly on our travels to conferences, workshops and client presentations. It is a view that is widespread in generalist and specialist media commenting on digital technology news and trends.

  The opportunity to reengineer is dependent on identifying and securing talent that can do this, that can think differently and "outside of the box," that can dream but also execute, that understands the modern tools needed to generate modern outcomes and that can re-think how a process should work and how a system can be made "beautiful." It requires people who can see through layers of "this is how it's always been done here" and suggest a better way and who can make the complex simple (as Einstein would say). Without this talent, inertia will reign, and the people responsible for building the previous-generation experience will continue to be intellectually and emotionally connected to what they sweated blood to create.

  Respondent after respondent in our survey reports on the need to acquire leading-edge talent and bemoans the difficult of finding it. However hard this is, though, enterprises must pursue every avenue of bringing the talent on-board, be it through hiring directly or through service providers. The salaries and day



rates for this talent can cause sticker shock to many; there is, however, simply no alternative. Acting now, betting big, leading clearly are all necessary, but they are insufficient for creating beautiful customer experiences; talent is essential.

Final Thoughts

Interacting *digitally* with your customers and prospects is crucial to competing in this new Code Halo era. Companies and organizations that are getting this right – Apple, GE, Burberry, AirBnB – are re-writing the rules of how businesses and commerce operates and are forging new paths through markets that are increasingly driven by digital agendas.

> Respondent after respondent in our survey reports on the need to acquire leading-edge talent and bemoans the difficulty of finding it.

If your organization is on top of this area, undoubtedly things are going well for you now. But if it's not, then this is an important time to recognize what needs to be done to turn this around. As the respondents in this survey clearly indicate, they understand the stakes at play and are extremely focused on taking the key steps – most notably, upgrading their people and their technology – over the next 36 months to be competitive.

When you and your team ask the question, "is the way we're interacting digitally with our customers and prospects awesome?" and the answer isn't "yes," you can take comfort in the fact that you're not alone. However, you also must recognize that this way trouble lies.

The next few months and years will be crucial in further separating digital leaders from laggards. It probably hasn't escaped your notice that technology innovation and disruption is getting faster and more impactful all the time; there simply isn't a moment to lose. Your customers can leave you at the click of a mouse, and if your engagement approach isn't first-rate, it's not hard for them to search for a competitor whose is.

But of course the reverse is also true. There is a lot to lose but a lot to win. Making the digital customer experience an *experience* is the perfect place to continue the fight to ensure that relevance and prosperity lie ahead.

Appendix 1: Methodology

Who Took the Survey?

Oxford Economics surveyed 300 senior executives with responsibility for consumer data and analytics in April 2014. Survey respondents were evenly distributed across the banking, insurance, life sciences and retail industries, and include numerous C-level titles and direct reports. Respondents work in the U.S., Germany, UK, the Netherlands, Sweden, Denmark, Norway and Finland; their companies have a range of profit margins.

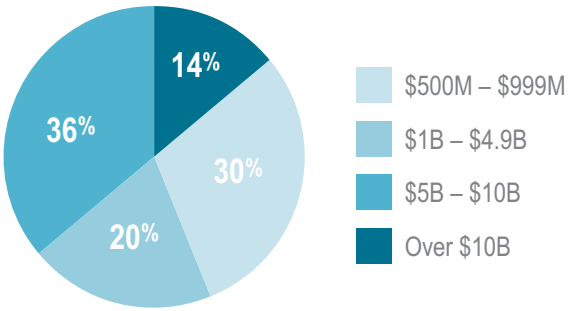
The case studies included in this research report are not necessarily Cognizant clients.

Respondents by Industry



What is your firm's industry segment?

Respondents by Company Size



What is your firm's annual revenue in US$ for the most recently completed fiscal year?

Appendix 2: The Name Game

Defining the Digital Customer Experience

We define the "digital customer experience" as an organization's customer-facing digital assets that straddle the physical and virtual worlds. This includes:

- Web sites.
- Mobile Web presence.
- Apps (downloadable from the Apple Appstore or Google's Playstore).
- In-store digital devices (e.g., kiosks, terminals, presentation screens, point of sale equipment).
- Wearables (e.g., watches, glasses, fitness monitors, sports equipment, clothing).

For non-retailers, it also includes the digital aspects of the organization's product portfolio (e.g., the integration of "smart" machines, such as automobiles or heating equipment, with data and information residing on the company's Web and mobile site).

Further, it encompasses machine-to-machine and person-to-person interactivity, and includes both business-to-consumer and business-to-business commerce.

The digital customer experience requires a digital and physical presence to be configured and optimized for multiple diverse form factors, such as iPads, mobile phones and wearables.

The terms "omni-channel," "multi-channel," "cross-channel," and "customer-360" are frequently used terms to describe the goal of achieving a seamless, high-quality experience across a broad range of digital and physical form factors.

The term "experience," when italicized, is used in this report as a synonym for something Americans would describe as "awesome" and the British might call "not bad."

Footnotes

[1] John McCarthy et al, "Software Must Enrich Your Brand," Forrester Research, February 2014.

[2] For more on Code Halos, see our book, *Code Halos: How the Digital Lives of People, Things, and Organizations are Changing the Rules of Business*, by Malcolm Frank, Paul Roehrig and Ben Pring, John Wiley & Sons, 2014, or our white paper, "Code Rules: A Playbook for Managing at the Crossroads," Cognizant Technology Solutions, June 2013, http://www.cognizant.com/Futureofwork/Documents/code-rules.pdf.

[3] The Trillion-Dollar Club includes six companies that have collectively made $1 trillion in market capitalization in the last 10 years, through leveraging the digital information provided by their customers.

[4] That's "hello" for all you non-coders.

[5] Our book, *Code Halos*, explores the impact of Code Halos in a wide number of business process areas.

[6] Mass personalization means delivering unique personalized experiences, goods and services for each individual customer.

[7] "The Future Has Arrived – It's Just Not Evenly Distributed Yet," Quote Investigator, Jan. 12, 2012, http://quoteinvestigator.com/2012/01/24/future-has-arrived/.

[8] Paul Roehrig and Ben Pring, "The Value of Signal and the Cost of Noise," Cognizant Technology Solutions, October 2013, http://www.cognizant.com/InsightsWhitepapers/The-Value-of-Signal-and-the-Cost-of-Noise-The-New-Economics-of-Meaning-Making.pdf.

[9] As we explain in our Code Halo book and white paper, companies face the prospect of an extinction event when they fail to respond to the market forces of the digital economy.

[10] "Is Your Business Model Being Disrupted? The Era of Code Halos Is Here," Cognizant Technology Solutions, Feb. 28, 2014, http://www.youtube.com/watch?v=hfKysCb3ju8.

[11] "By 2017 the CMO Will Spend More on IT than the CIO," Gartner, Inc., Jan. 3, 2012, http://my.gartner.com/portal/server.pt%3Fopen%3D512%26objID%3D202%26mode%3D2%26PageID%3D5553%26ref%3Dwebinar-rss%26resId%3D1871515.

[12] Robert Berkman, "The Emergence of Chief Digital Officers," *MIT Sloan Management Review*, April 29, 2013, http://sloanreview.mit.edu/article/social-business-helps-usher-in-new-executive-the-cdo/.

[13] "Bullish on Digital: McKinsey Global Survey Results," McKinsey & Co., August 2013, http://www.mckinsey.com/insights/business_technology/bullish_on_digital_mckinsey_global_survey_results.

[14] The Churchill Centre, http://www.winstonchurchill.org/learn/biography/timelines.

[15] Brooks Barnes, "A Billion-Dollar Bracelet Is Key to a Disney Park," *The New York Times*, April 1, 2014, http://www.nytimes.com/2014/04/02/business/billion-dollar-bracelet-is-key-to-magical-kingdom.html?_r=0

About the Author



Ben Pring co-leads Cognizant's Center for the Future of Work. He joined Cognizant after spending 15 years with Gartner as a senior industry analyst, researching and advising in areas such as cloud computing and global sourcing. Prior to Gartner, Ben worked for a number of consulting companies, including Coopers & Lybrand. His expertise in helping clients see around corners, think the unthinkable and calculate the compound annual growth rate of unintended consequences has brought him to Cognizant, where his charter is to research and analyze how organizations can leverage the incredibly powerful new opportunities that are being created as new technologies make computing power more pervasive, more affordable and more important than ever before. Ben graduated with a degree in philosophy from Manchester University in the UK. He can be reached at Benjamin.Pring@cognizant.com.

Cognizant's Center for the Future of Work

Cognizant's Center for the Future of Work provides original research and analysis of work trends and dynamics, and collaborates with a wide range of business and technology thinkers and academics about what the future of work will look like as technology changes so many aspects of our working lives. Learn more by visiting www.futureofwork.com.

Oxford Economics

Oxford Economics is one of the world's foremost independent global advisory firms, providing reports, forecasts, thought leadership and analytical tools that cover some 190 countries, 100 industrial sectors and over 2,600 cities. Founded in 1981 with its headquarters in Oxford, England, and with regional centers in London, New York and Singapore, Oxford Economics uses its team of professional economists, industry experts and editorial specialists to advise corporate, financial and government decision-makers and develop evidence-based thought leadership. Its worldwide client base now comprises over 700 international organizations, including leading multinational companies and financial institutions; key government bodies and trade associations; and top universities, consultancies and think tanks.

Code Halo™ and SMAC Stack™ are pending trademarks of Cognizant Technology Solutions.

Note: The company names presented throughout this white paper are the property of their respective trademark owners, are not affiliated with Cognizant Technology Solutions, and are displayed for illustrative purposes only. Use of the logo does not imply endorsement of the organization by Cognizant, nor vice versa.



COGNIZANT

World Headquarters

500 Frank W. Burr Blvd.
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277
inquiry@cognizant.com

European Headquarters

1 Kingdom Street
Paddington Central
London W2 6BD
Phone: +44 (0) 207 297 7600
Fax: +44 (0) 207 121 0102
infouk@cognizant.com

India Operations Headquarters

#5/535, Old Mahabalipuram Road
Okkiyam Pettai, Thoraipakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060
inquiryindia@cognizant.com



Cognizant

© Copyright 2014, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express written permission from Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned herein are the property of their respective owners.